

"cross-assign" reference doses for the COCs. Thus ITT states that EPA assumes that the ingestion reference doses are equivalent to inhalation reference doses which unnecessarily injects uncertainty into the risk assessment.

EPA Response: The cross-assignment for reference doses for COCs was intended to provide "quantitative" information to the risk manager with regard to compounds without defined toxicity values. The uncertainty associated with this cross-assignment is noted in Section 7.6.2 (Uncertainty in Toxicity Information), Page 7-26, Point 5 and Section 7.5.4 (Risk Evaluation) of the RI Report for the Glendale Study Area.

29. II. C. 4. c. - The risk assessment should be revised to identify more than the potential areas of uncertainties. ITT stated that the risk assessment should: 1) qualify the uncertainties to the extent possible; 2) eliminate or reduce the uncertainty where possible; and 3) present a cohesive interpretation of these uncertainties in the overall conclusions of the risk assessment.

EPA Response: Again, see EPA Responses to ITT Comments 18, 21 and 22.

### III. FS Alternatives

30. III. - The FS alternatives are not shown to be consistent with a permanent remedy. ITT states that EPA should develop a basinwide plan and that proposed interim measures should be coordinated with that plan to maximize overall effectiveness. ITT also states that EPA has not demonstrated how the Glendale Study Area (GSA) OUs will be consistent with the other OUs in the basin or consistent with the final remedy for the entire basin.

EPA Response: As discussed in the GSA RI and the Glendale North Plume Operable Unit FS, EPA has recently completed a basinwide groundwater RI (December 1992) and is currently developing a basinwide FS which will address the remedial objectives for the overall basin and will address the coordination of the interim actions that have been or will be implemented in the near future. EPA disagrees with ITT's characterization of the NCP regarding OU consistency with a final remedy. The NCP only provides that one of the general management principles of the Superfund Program is that operable units should not be inconsistent with nor preclude implementation of the expected final remedy.

As discussed in the GSA RI and FS documents, the information from the OUs will be an integral part of the overall RI and FS and will be used by EPA to develop final remedial solutions for the groundwater contamination. EPA believes that the Glendale North OU interim remedy would not preclude any type of final groundwater

remedy at the site and would not be inconsistent with any final remedy selected for the site even no-action.

One of the purposes of performing interim remedial actions in complex groundwater situations is to develop information which will be used by EPA to develop final remedial actions. "Guidance on Implementation of the Superfund Accelerated Cleanup Model (SACM) under CERCLA and the NCP," (Jul. 7, 1992) at pg 8. In fact, one example of an interim action set forth in the SACM Guidance is the "installation of a groundwater pumping system to contain a contaminant plume while the feasibility of aquifer treatment is being studied." Id.

#### IV. Selection of ARARs

31. IV. A. - ITT stated that the OU RI/FS and EPA Documents do not identify potential ARARs for the site with sufficient specificity. EPA references entire statutes as ARARs which are too broad and do not indicate which specific requirements EPA believes to be applicable or relevant and appropriate for the site remedy.

EPA Response: EPA disagrees with this comment. In the RI report for the Glendale Study Area and FS report for the Glendale North OU, EPA identified potential ARARs and TBCs for the Glendale North OU. Final determination of ARARs and TBCs is made in the ROD for the selected remedy. In addition, several documents in the Administrative Record for the Glendale North OU Proposed Plan further identify ARARs for the Glendale North OU. For example, see Administrative Record documents 0266 and 0267. These two documents are EPA responses to State comments on the Glendale North OU Proposed Plan and include ARARs determinations. Again, the "EPA documents" as defined by ITT represent only a small portion of the Administrative Record developed to document EPA decisions regarding EPA's preferred alternative for the Glendale North OU interim remedy. Therefore, ITT must review the Administrative Record to see the complete record on EPA's ARARs determinations and other information pertinent to the RI, FS, and EPA's preferred alternative selection.

32. IV. A. - ITT stated that EPA provides incomplete and confusing citation to the ARARs and cites repealed or out-of-date requirements which will defeat the reviewing public's ability to determine what requirements have been selected by EPA.

EPA Response: As noted in documents available for review in the Administrative Record (e.g. AR documents 0127 and 0254), when the State provided EPA with their ARARs, EPA did not verify ARARs citations but used the citations provided by the State in the letters. However, EPA has since learned that the State provided EPA with several ARARs citations that were incorrect. EPA has corrected these citations in the ARARs section of the ROD for the Glendale North OU.

33. IV. B. - ITT stated that EPA fails to analyze the ARARs adequately to determine whether each is applicable or relevant and appropriate and does not provide reasons why they are relevant and appropriate at this site. ITT further states that EPA gives only the most conclusory explanation for why a particular requirement was chosen. ITT also states that the ARARs presented are too vague and imprecise to allow for informed decision-making by EPA or for meaningful comment by the public.

EPA Response: See EPA Response to ITT Comment 31.

34. IV. C. - ITT stated that EPA fails to analyze potentially applicable ARARs waivers and determine whether circumstances justify a waiver.

EPA Response: ARAR waivers are not necessary as the Glendale North OU is an interim action and not a final remedy. The objectives of the Glendale North interim action are to begin removing contaminant mass from the most highly contaminated portion of the Glendale north plume and to inhibit further migration of the groundwater contamination. The objectives include meeting ARARs in the treated water but not in the aquifer. At the time of the final remedy for the San Fernando Valley, all ARARs, including those for the aquifer, will need to be met or waived.

35. IV. D. - ITT stated that EPA applies a broader standard for the selection of TBCs than is appropriate because TBCs should be relied upon where there are no ARARs or where existing ARARs will not ensure protectiveness of the remedy. EPA appears to select TBCs in situations in which ARARs address the same conditions. EPA does not explain how the TBCs would offer any additional benefit over the ARARs.

EPA Response: EPA's Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA (October 1988) states that, "Other federal and state criteria, advisories, and guidance and local ordinances should also be considered, as appropriate, in the development of remedial action alternatives." TBCs discussed in the RI report for the GSA are potential requirements. Many were provided to EPA in response to its request to identify ARARs for the Glendale interim cleanup. Final determinations regarding which TBCs, if any, shall be requirements for the Glendale North OU were to be included in the ROD with an explanation as to why they are requirements. In the Glendale North OU ROD, with the exception of secondary drinking water standards, no TBCs were determined to be requirements for the selected interim remedy.

## V. Screening of Alternatives

36. V. - ITT stated that the alternatives were not screened properly. ITT stated that EPA's discussion of the alternative

screening criteria is vague and that the basis for costing out the various remedial activities is not explained. As an example, ITT stated that cost estimates such as those for acquiring easements and rights-of-way are not included. ITT stated that reliable comparisons of the costs of the alternatives are therefore not possible.

EPA Response: EPA disagrees. Cost estimation for the alternatives was performed in accordance with Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA (USEPA 1988). As specified in this EPA guidance document, the cost estimates have an accuracy of +50 percent to -30 percent. Detailed cost analysis is not required for technologies that are not carried through detailed analysis.

37. V. - ITT stated that the overall failure of the EPA Documents to provide adequate data, address DNAPL and associated mass and cleanup times, and consider newly available technologies, demonstrates that the FS cost estimates are unreasonable. ITT states that each of these issues alone could effect EPA's cost estimates.

EPA Response: EPA disagrees with this comment. As discussed in EPA's responses to ITT Comments 2 and 5, EPA has collected sufficient and adequate data to select the interim remedy and has evaluated the interim action remedial alternatives in accordance with the NCP and EPA policy regarding the data and documentation necessary to support an interim remedial action and estimate the cost thereof.

In addition, as noted in Chapter 4 -Development and Screening of Alternatives of the Guidance for Conducting Remedial Investigations and Feasibility Studies (USEPA 1988), "Cost plays a limited role in the screening of process options. Relative capital and O&M costs are used rather than detailed estimates....Absolute accuracy of cost estimates during screening is not essential. The focus should be to make comparative estimates for alternatives with relative accuracy so that cost decisions among alternatives will be sustained as the accuracy of cost estimates improves beyond the screening process." EPA obtained sufficient data to estimate and evaluate costs during the initial screening of alternatives. Also see EPA Response to ITT Comment 36.

#### **VI. FS Analysis Compliance with NCP and EPA Guidance**

38. VI. - ITT stated that the detailed analysis in the FS does not comply with the NCP or EPA guidance. There is no discussion of how the detailed alternatives analyses would change if the possible locations for extraction, injection, and monitoring were moved.

EPA Response: The NCP does not require that the detailed analysis portion of the FS address all possible changes to the alternatives

that may occur during the remedial design phase for interim remedial actions or final remedial actions. If significant changes are made to the remedy during the remedial design phase, EPA will consider whether an Explanation of Significant Differences or an amendment to the ROD is necessary. 40 C.F.R. §300.435(c)(2)(i)-(ii).

39. VI. A. - ITT stated that the analysis of the nine evaluation criteria required under the NCP is not adequately detailed given the complexity of the site.

EPA Response: Although EPA agrees that the basinwide groundwater contamination is complex, EPA disagrees that the interim remedy of limited groundwater pumping is complex. The evaluation of the nine criteria for the interim remedy is consistent with the limited scope and purpose of the interim action. It is EPA policy that the analysis and documentation to support an interim action ROD does not to be as detailed as what is provided for final action RODs due to the limited nature of interim actions and the need to take action as expeditiously as practicable. For example, generally the criteria of long-term effectiveness and permanence will not be directly relevant to interim ground water actions and therefore are generally not addressed in depth for interim actions. "Guide to Developing Superfund No Action, Interim Action, and Contingency Remedy RODs" (April 1991). EPA's ability to streamline the RI/FS analysis for an interim action is essential to accelerate the implementation of the interim response. 55 Fed. Reg at 8704.

40. VI. A. 1. - ITT stated that EPA does not provide adequate support for its statements and conclusions that a particular alternative would be protective of human health and the environment. Specifically, EPA does not explain how it determined that a particular risk will be eliminated or controlled or whether the alternatives pose short-term or cross-media risks.

EPA Response: EPA disagrees. EPA provides sufficient information to support the discussions on the overall protection of human health and the environment criterion in the FS. The discussions focus on whether or not the alternatives meet the objectives of the Glendale North OU interim remedy: contaminant mass removal and inhibition of further groundwater contamination migration. Alternative 2, for example, is protective of human health and the environment because it removes contaminant mass, inhibits further migration, reduces discharge to the Los Angeles River and would not pose risks to workers or to nearby communities.

41. VI. A. 1. - ITT stated that the analysis of human health and the environment is inadequate because the vertical migration of chemicals into the lower producing zones is not addressed; and additive upgradient sources which may impact both the upper and lower zones were not clearly addressed. ITT also stated that the

FS does not adequately address health risks as a result of the possible use of supply wells.

EPA Response: EPA disagrees. These two factors are addressed in the FS report for the Glendale North OU. The FS alternatives were evaluated with respect to inhibition of both downgradient/lateral migration and vertical migration. Proposed extraction scenarios as well as proposals for production well rehabilitation and/or abandonment are presented in each alternative and evaluated with respect to controlling vertical migration. Upgradient sources such as groundwater contamination not addressed by the Burbank OU were included in cleanup estimates for the Glendale North OU. The risk assessment is based on use of the contaminated groundwater, untreated. Access to the contaminated groundwater would be through use of supply wells. The Glendale North OU interim remedy is focusing on contaminant mass removal and inhibition of migration for the most contaminated portion of the Glendale north plume. The majority of the contamination is in the upper zone of the aquifer and therefore analyses of the FS alternatives focused on upper zone effects.

42. VI. A. 2. - ITT stated that EPA's ARAR assessments do not provide the required level of analysis and that it is not clear what ARARs each alternative must meet or how they will achieve compliance.

EPA Response: EPA disagrees. See EPA Response to ITT Comment 31.

43. VI. A. 3. - ITT stated that EPA's analysis of long-term effectiveness and permanence for each alternative is inadequate to support its statement that the alternatives will be effective in the long-term in protecting human health and the environment. Specifically, ITT believes the analyses do not address the issue of adequacy and reliability of controls such as containment systems and institutional controls that are necessary to manage untreated waste and treatment residuals. Additionally, ITT believes the analyses only cursorily address the factor of the magnitude of residual risk remaining from untreated waste or treatment residuals at the conclusion of remedy implementation.

EPA Response: EPA's analysis in the FS of long-term effectiveness and permanence for each interim action alternative is sufficient given the limited scope of the interim action. See EPA Response to ITT Comment 39.

44. VI. A. 3. - ITT stated that the analyses of long-term effectiveness and permanence do not consider the potential presence of DNAPL residual and that some alternatives proposed in the FS (for instance, those that do not require treatment of extracted groundwater at the point of use) would therefore not be effective in the long-term. ITT stated that even if DNAPL residual is not present, data completeness, model validity, and contaminant

distribution should be more thoroughly analyzed to determine long-term effectiveness and permanence.

EPA Response: The Glendale North OU is an interim and not a permanent remedy. As an interim action, the Glendale North OU will not meet drinking water standards in the aquifer. Addressing DNAPL contamination was not a remedial objective of the Glendale North OU interim remedy. The long-term effectiveness criterion was used to evaluate the long-term effectiveness with respect to an interim measure not a final cleanup. See EPA Responses to ITT Comments 39 and 70.

45. VI. A. 4. - ITT stated that several factors that should be used to evaluate the degree to which the alternatives reduce toxicity, mobility, or volume are not fully analyzed. ITT states that EPA's analysis does not include information on the amount of hazardous materials that will be treated, the expected percentage of reduction in toxicity, mobility, or volume, whether or not the treatment will be irreversible, and which treatment residuals will remain.

EPA Response: As discussed in the response to ITT Comment 39, the level of analysis of these criteria in the OU FS is limited because the action being selected here is an interim one and as such does not require more in depth analysis.

46. VI. A. 4. - ITT stated that the FS fails to account for the DNAPL residual which prevents assessment of the factors related to the analysis of toxicity, mobility, or volume through treatment. In particular, the presence of DNAPL in the water-bearing zone should be addressed in the RI/FS because they could affect the treatment's effectiveness.

EPA Response: It was not necessary to account for DNAPL residual in order to evaluate the Glendale North OU interim remedy in terms of reduction of TMV. Again it is an interim remedy. See EPA Responses to ITT Comments 39, 44 and 70.

47. VI. A. 4. - ITT stated that the initiation of treatment could potentially mobilize the (separate phase) DNAPL material and that this potential mobilization is not discussed in the analysis of how each alternative will reduce toxicity, mobility, or volume.

EPA Response: See EPA Responses to ITT Comments, 39, 44, 46, and 70.

48. VI. A. 5. - ITT stated that factors that address short-term impacts of the alternatives are not fully analyzed and that EPA used conclusory statements in place of a full assessment of actions to be taken to minimize risks. These factors include short-term risks to the community, potential impacts on workers, environmental impacts, and the length of time it will take until the remedy

achieves protection.

EPA Response: As stated in the FS, and in the ROD, the Glendale North OU interim remedy is effective in the short term at eliminating or minimizing risks to workers, the local community and the environment. A health and safety plan will be developed to protect workers working on the Glendale North OU project. Appropriate measures, such as fencing and lighting will be put in place to protect the local community from potential harm during the construction and initiation of the remedial action.

49. VI. A. 5. - ITT stated that there is potential for the proposed groundwater extraction scenarios to further contaminate "clean" areas and that this potential should be addressed in evaluating short-term effectiveness.

EPA Response: EPA disagrees with this comment. If the Glendale North OU interim remedy were not implemented, contamination of "clean" areas both downgradient and in deeper zones of the aquifer is very likely. The Glendale North OU interim remedy is not expected to "further contaminate 'clean' areas" and therefore EPA did not evaluate this under the short-term effectiveness criterion.

50. VI. A. 6. - ITT stated that factors that address ease or difficulty of implementing the alternatives such as technical feasibility, administrative feasibility, and the availability of services and materials, are not fully analyzed. Specifically, ITT stated that a detailed analysis of these factors is appropriate in light of the size and complexity of the basin.

EPA Response: EPA recognizes that the overall basin groundwater contamination is complex. However, the interim remedy is not complex and accordingly, there is no need to analyze these factors in depth in the FS for this interim action. The level of analysis of these factors in the OU FS is appropriate to the interim action. Again, see EPA Response to ITT Comment 39.

51. VI. A. 6. - ITT stated that several technologies were dismissed on the basis of implementability (for example, resin adsorption or hydraulic air stripping) without adequate justification and enhancements to currently accepted technologies were not considered.

EPA Response: It is EPA policy to generally limit the number of alternatives that are considered for interim actions in order to streamline the process of selecting interim actions. 55 Fed. Reg. at 8704; "Guide to Developing Superfund No Action, Interim Action, and Contingency Remedy RODs" (April 1991). The purpose of this policy is to accelerate implementation of interim actions. The 11 interim action alternatives considered by EPA during the development and screening of alternatives (Section 5) of the FS



provided a sufficient array of alternative technologies in light of the limited objectives of the interim action.

52. VI. A. 6. - ITT stated that the analysis of administrative feasibility (one of the factors to be considered when evaluating implementability) lacks sufficient detail and does not address coordination activities with other offices and agencies, and the time required to obtain necessary permits, approvals, and easements for construction.

EPA Response: EPA disagrees that more detail is necessary for the analysis of administrative feasibility for the reasons discussed in the response to ITT's Comment 39.

53. VI. A. 7. - ITT stated that EPA does not fully analyze the factors that address costs for the alternatives such as capital costs, annual operation and maintenance (O&M) costs, and net present value of capital and O&M costs. ITT stated that EPA's use of a 20 percent contingency to the O&M costs for the various scenarios could significantly underestimate costs because the site is large and complex and could experience breakdown problems.

EPA Response: The interim remedy of a straightforward groundwater pump and treat remedy for 12 years is not complex. Therefore, EPA does not agree that the costs for the interim remedy could be significantly underestimated. In addition, in accordance with Guidance for Conducting Remedial Investigations and Feasibility Studies (USEPA 1988), "...costs made during the FS are expected to provide an accuracy of +50 percent to -30 percent and are prepared using data available from the RI."

54. VI. A. 7. - ITT stated that it is unclear if sufficient effluent stream and emissions monitoring are included in the O&M scenario costs, especially for delivery to a water purveyor. Additionally, it is unclear if collection, handling, and analysis for all influent and effluent water for the treatment system and monitoring extraction wells are included in the cost estimates for monthly monitoring. ITT stated that if these factors are not considered the monitoring costs could be underestimated.

EPA Response: First, the effluent stream and emissions monitoring were included. This information is presented in Appendix D of the FS report for the Glendale North OU (April 1992). Second, in accordance with EPA guidance on conducting RI/FSs, the cost estimates have an accuracy of +50 percent to -30 percent. Therefore, even if the monitoring costs were underestimated, per ITT's comment, the overall costs of the FS alternatives would still be within the range determined appropriate by EPA for decision-making. EPA is not required to cost out every potential element of a potential remedy but to develop an estimate based on the major components in order to compare the costs of alternatives against one another. And again the cost estimates need only have an